

CLAIMS

What is claimed is:

1. A coolant nozzle for use on a machine tool having a rotating bit of convoluted longitudinal profile for cutting a plurality of slots in a disk, the nozzle comprising:
 - at least one coolant inlet;
 - at least one coolant outlet having a convoluted section and positioned to direct a coolant stream tangentially at the bit in a direction of rotation of the bit; and
 - internal surface portions defining one or more passageways between the at least one coolant inlet the and at least one coolant outlet.
2. The nozzle of claim 1 wherein the internal surface portions are formed in a laser sintered ceramic body.
3. The nozzle of claim 1 wherein the at least one coolant outlet includes a first outlet and the nozzle further comprises a first guide surface positioned to direct the coolant stream toward the slot so that:
 - with the bit aside the slot between the disk and the first outlet, the coolant stream of the first outlet passes laterally between the bit and the first guide surface.
4. The nozzle of claim 1 wherein the at least one coolant outlet comprises first and second outlets on first and second sides of a disk-receiving space.
5. The nozzle of claim 1 in combination with the machine tool and bit and wherein the nozzle is shiftably mounted to permit the nozzle to be shifted between an operative condition wherein the nozzle blocks longitudinal extraction of the disk from the machine and a cleared condition in which the nozzle does not block said extraction.
6. A coolant nozzle for use on a machine tool having a rotating bit for shaping a slot in a workpiece, the nozzle comprising:
 - a gap for accommodating the workpiece in an operative position;
 - at least one coolant inlet;
 - a first coolant outlet positioned to direct a first coolant stream toward the workpiece from a first side of the workpiece;
 - a second coolant outlet positioned to direct a second coolant stream toward the

workpiece from a second side of the workpiece;

a first guide surface positioned to direct the first coolant stream toward the slot; and

a second guide surface positioned to direct the second coolant stream toward the slot.

7. The coolant nozzle of claim 6 wherein the first and second guide surfaces face in substantially opposite directions.

8. The coolant nozzle of claim 6 wherein the first and second guide surfaces have convoluted sections corresponding to convoluted first and second side portions of the slot as shaped by the bit.

9. The coolant nozzle of claim 8 wherein first and second coolant outlets have convoluted sections corresponding to said first and second side portions of the slot as shaped by the bit.

10. The coolant nozzle of claim 6 wherein the first and second guide surfaces and first and second outlets are on first and second arms of a single sintered ceramic element.